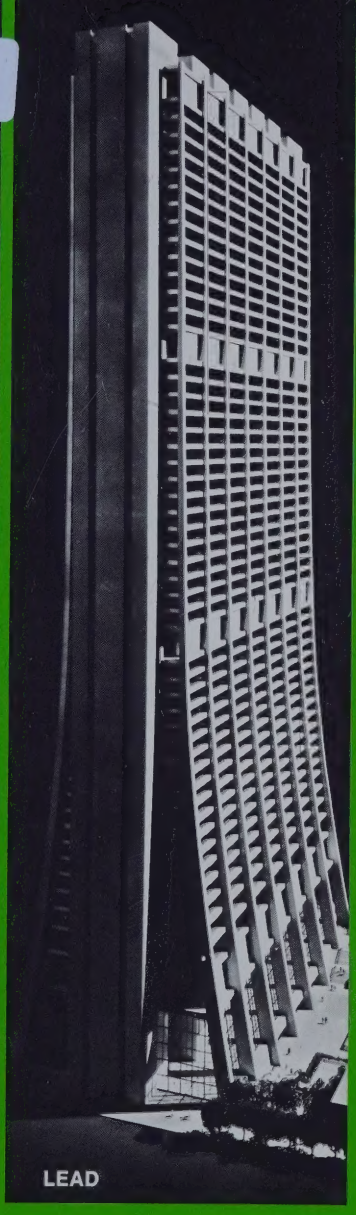
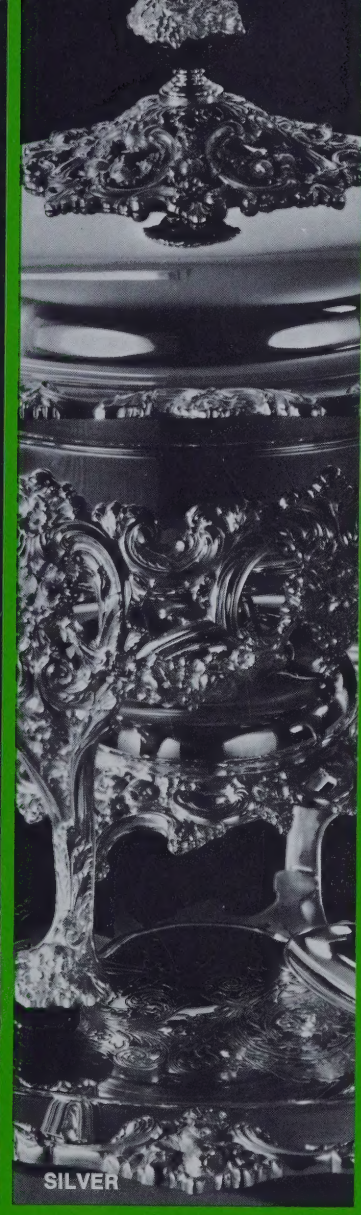
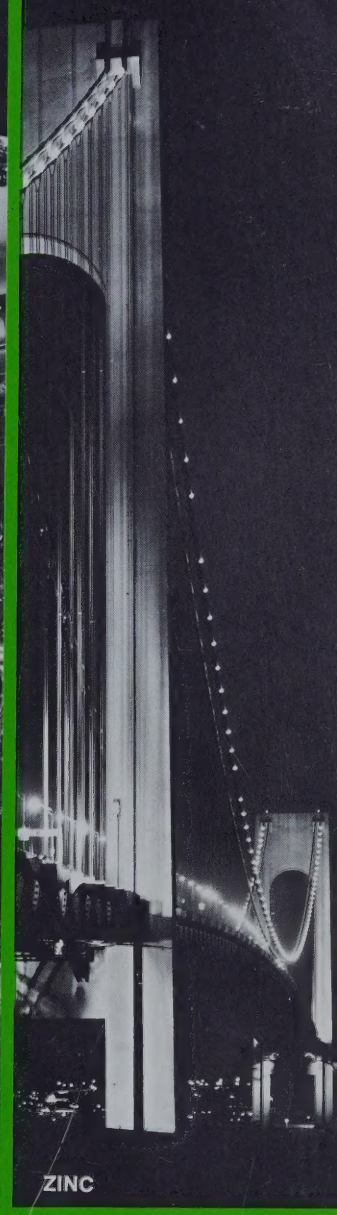
OPPER



LEAD



SILVER



ZINC

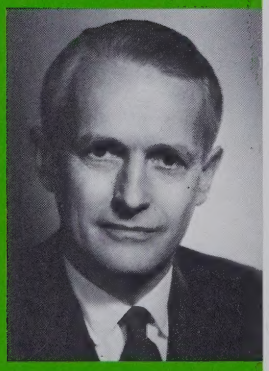
1971 Annual Report

ASARCO

AMERICAN SMELTING AND REFINING COMPANY

Executive Changes

The Board of Directors elected a new Chairman, President, and two Executive Vice Presidents on April 27, 1971 upon the retirement of the preceding Chairman, Edward McL. Tittmann.

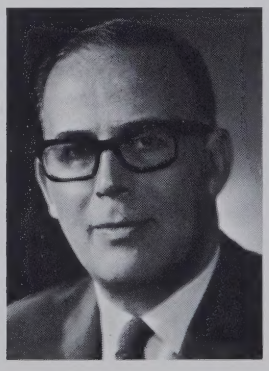


CHARLES F. BARBER
Chairman of the Board and Chief Executive Officer

Mr. Barber, 54, has been with Asarco since 1956. He joined the Company as General Counsel after private practice in Washington, D.C. and two years as Assistant to the Solicitor General of the United States. He was elected a Director and Vice President in 1959, Executive Vice President in 1963, and President in 1969.

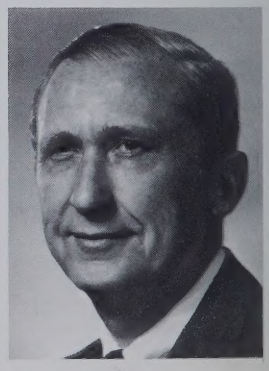
RALPH L. HENNEBACH
President

Mr. Hennebach, 51, has been with Asarco since 1941, except for service in the U.S. Navy during World War II. He was named Vice President in charge of smelting and refining in 1963, was elected a Director in 1964, and Executive Vice President in 1966.



SIMON D. STRAUSS
Executive Vice President

Mr. Strauss, 60, joined Asarco in 1946 after wartime service in Washington as Vice President of Metals Reserve Company. He became Asarco's Sales Manager in 1947 and Vice President—Sales in 1949; he was elected a Director in 1953.

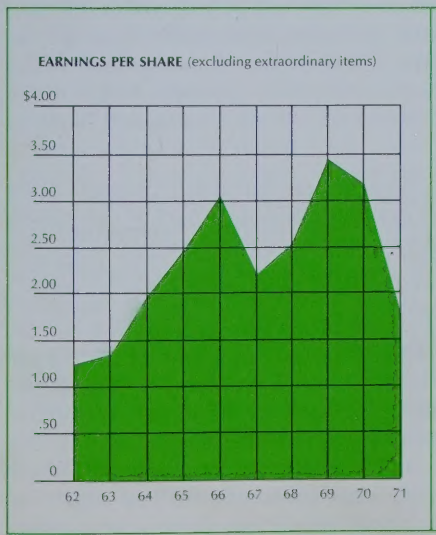


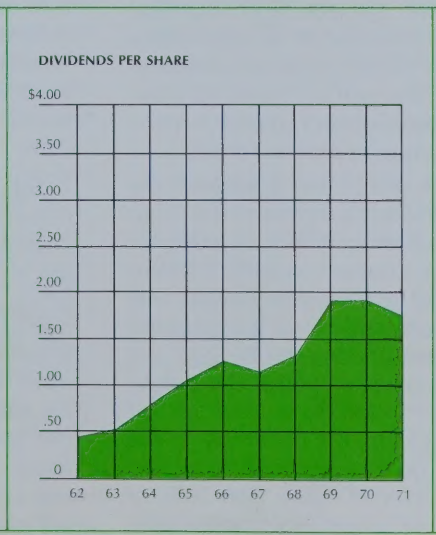
FORREST G. HAMRICK
Executive Vice President

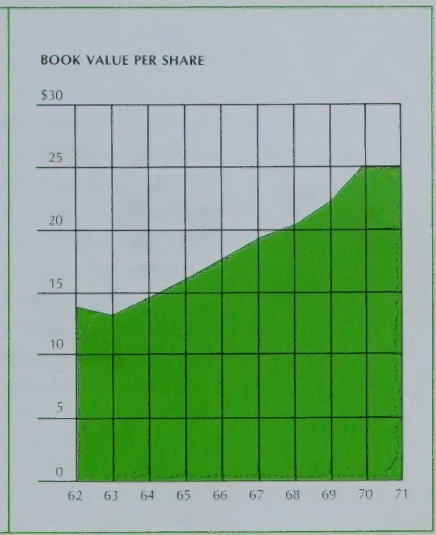
Mr. Hamrick, 61, joined Asarco in 1946 after extensive experience in the investment field. He was elected a Director and Treasurer of Asarco in 1957, and Vice President—Finance in 1959.

Highlights

	1971	Per Share	1970	Per Share
Earnings before extraordinary items	$ 46,013,000	$1.72	$ 88,803,000	$3.16
Extraordinary items, net of income tax	—	—	22,915,000	.81
Net earnings	$ 46,013,000	$1.72	$111,718,000	$3.97
Dividends paid	$ 46,247,000	$1.73	$ 53,893,000	$1.90
Exploration and research expenses	11,234,000		12,578,000	
Capital expenditures	55,378,000		72,186,000	
Depreciation and depletion	17,886,000		15,223,000	
Working capital (at year end)	$173,681,000		$191,713,000	
Shares outstanding (average for year)	26,802,076		28,156,657	
Stockholders (at year end)	63,500		50,900	
Employees (average for year)	13,600		14,100	







To Asarco Stockholders:

The cost-price squeeze and nationwide strikes in the copper and coal industries had a major impact on Asarco's earnings in 1971. Prices were lower for most products — zinc being an exception — as business recession both at home and abroad reduced demand for metals. Costs rose due to higher wage rates, sharply increased prices for fuels and supplies, and the effect on operations of new measures to improve the environment.

The consequence was that net earnings in 1971 fell to $46,013,000 or $1.72 per share, compared to $88,803,000 or $3.16 per share in 1970, exclusive of extraordinary items. In 1970 there had also been earnings of $22,915,000 or $0.81 per share due to items of a nonrecurring nature. Because of the lower earnings, your directors deemed it prudent to reduce the dividend rate to $0.30 quarterly in the 1971 fourth quarter. The previous rate of $0.475 quarterly had been in effect since the first quarter of 1969.

Apart from dealing with the generally adverse economic climate in 1971, your management was faced with a variety of pressing problems during the year.

The most important of these resulted from public concern over the effects of industrial activity on the environment. In an atmosphere from time to time characterized by unreasoning demands on the part of some environmentalists and public officials, Asarco is striving to improve air quality at its smelters.

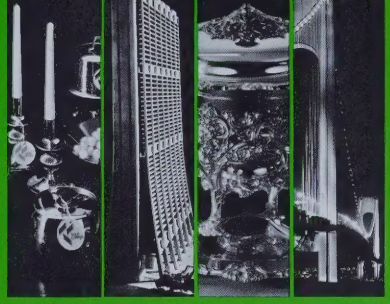
As noted in the report which follows, the year has seen important progress in the Company's $50 million program to improve air quality at its three copper smelters. The sulfuric acid plant at the Hayden smelter was completed, and was dedicated by Governor Williams of Arizona on January 25, 1972. An acid plant is under construction at the El Paso smelter and construction of a liquid sulfur dioxide plant will soon get underway at the Tacoma smelter. Each of these facilities will result in the recovery of more than 50% of the sulfur contained in ores and concentrates smelted at the plants. The pilot plant to test an Asarco process for the production of elemental sulfur from smelter gases was also completed during the year and is in operation at the El Paso smelter.

Federal standards for sulfur oxides were published in April 1971 and established standards for the ambient air—the air we breathe—at levels designed to protect the public health and welfare "with an adequate margin of safety". They were established after a comprehensive review of available data on the effects of sulfur oxides. The publication of these bench mark federal standards and implementing regulations under the Clean Air Act has served to bring some order to the process of air quality control regulation by the states. We are committed to meeting these standards at all of our smelters.

A vexing problem this past year, during which the states have been developing state implementation plans, has been the tendency in some states to establish standards which are unnecessarily rigid. In our appearances before the state and local regulatory authorities we have attempted to demonstrate what can and what cannot be accomplished at existing plants with available technology and within the constraints of governing economics. These are extraordinarily important considerations which seem to have received too little weight in the public discussion of environmental issues to date.

The expenditures for sulfur control at the copper smelters are only a part of our capital investments on the environmental front. We are also engaged in air quality control programs at our other smelters and secondary plants; we are taking further steps to minimize liquid effluents from our plants as part of our water quality control program; we are spending substantial sums at the mines to improve the appearance of waste dumps and tailings dams; and the stricter occupational health and safety standards under Federal legislation call for significant outlays at most operations.

This report is designed to emphasize the metals and minerals produced by Asarco and their end uses. Our four principal products are featured on the cover.



The year 1971 brought sharply higher labor costs without commensurate increases in productivity. The three-year contracts at our principal domestic plants and mines negotiated in 1968 expired. Settlements with the employees at our copper mines and plants were reached only after a two months' strike and reflected the inflationary wage pattern which had been established in other industries. New agreements at the Federated Metals Division plants and domestic lead and zinc properties were reached without interruptions in production. At the Buchans mine in Newfoundland, a strike occurred which lasted almost 5 months. Also, the properties of Asarco's Midland Coal Division were shut down by the nationwide coal strike during October and November.

In the long run, higher costs must be recognized in the prices of metals, but traditionally prices in the nonferrous metals industry are determined primarily by the ratio of supply to demand. In a period of low demand, such as experienced in 1970-1971, prices have been weak in spite of inflationary costs.

With the evidence of some improvement in demand during the first quarter of 1972, prices have strengthened moderately. Under the terms of the Federal price regulations as they now exist, copper and lead prices are still well below the May 25, 1970 levels, which constitute our ceilings. In the case of zinc, the prices are already at the ceiling level. Price Commission procedures, which may be well suited to manufacturing enterprises producing brand products, are not well adapted to industrial raw materials. Discussions are underway with the pricing authorities in the hope of convincing them that certain exemptions should be provided for primary metals.

As evidence of your management's confidence in the long-term future of the nonferrous metals industry, further steps were taken during the year to expand and diversify our activities.

Most significant perhaps was the acquisition in November of some of the properties of American Zinc Company. We acquired two plants which produce zinc oxide, a new product for Asarco. The major outlets are in the rubber, paint and paper trades and prospects for expansion appear bright. In addition, we acquired zinc mining operations in Tennessee, which supply the zinc oxide plants, and American Zinc's limestone division which supplies crushed stone, sand and ready-mixed concrete primarily in the eastern Tennessee market.

During the year, site preparation was begun on the plant to mine Asarco's ilmenite deposits near Lakehurst, New Jersey. Also, production began at the small zinc-lead mines at Leadville, Colorado and Bonanza, Nicaragua and at the major Granduc copper mine in British Columbia.

The associated companies—M.I.M. Holdings Limited (Mount Isa), Southern Peru Copper Corporation and Asarco Mexicana, S.A. — reported lower earnings in 1971 than in 1970, chiefly due to the drop in metal prices. At Mount Isa progress was made in the expansion of its copper production to a rate of 170,000 tons a year, a goal which should be reached in 1973. At the Cuajone property, Southern Peru Copper Corporation maintained the development and construction schedule without recourse to outside funds. Production began at Asarco Mexicana's Inguaran copper mine early in 1971.

Mr. E. McL. Tittmann, our former Chairman, retired in April after a career with Asarco which spanned 42 years. The solid growth of the Company during the eight years of his stewardship is a fitting tribute to his distinguished leadership.

On behalf of the Board of Directors we wish to express our appreciation for the continued support that Asarco has enjoyed from its employees, stockholders, customers and suppliers.

Charles F. Barber, Chairman
Ralph L. Hennebach, President

February 29, 1972

COPPER

Supply and Demand With industry labor contracts expiring in mid-1971, domestic demand for copper went through the cycle, now typical in most major industries, of pre-expiration buildup and post-expiration slump. In the case of the copper industry, a strike occurred which resulted in about 250,000 tons of production being lost in the third quarter. However, the heavy buying by consumers prior to the strike did serve to dispel the atmosphere of pessimism pervading world copper markets following the drastic price shakeout in late 1970 when substantial surpluses had developed. Evidence that the nationalized copper industry of Chile would not meet its production goals also contributed to the firmer market tone in early spring.

The business recession held copper consumption in 1971 both in the United States and abroad to levels closely approximating those of 1970. Copper Institute figures show deliveries to Free World fabricators of 4,518,000 tons in 1971 against 4,552,000 tons in 1970. Prices on the London Metal Exchange fluctuated during the year over a much narrower range than in 1970. In the United States there were three producer price changes—a drop from 53¢ to 50¼¢ in January; a rise to 52¾¢ in late March and a drop back to 50¼¢ in November. For the greater part of the year the U.S. price was somewhat higher than the London price, but during the spring rally London copper was at a premium.

Additions to copper mining capacity have created a potential substantial surplus, but full utilization of capacity may be impeded by the developing bottleneck in smelter capacity, by continued labor unrest, and by political events in the developing countries which account for 40% of the Free World's copper supply. Consumption has not reattained the peak level of 1969, but is expected to establish new records if general economic activity resumes its growth.

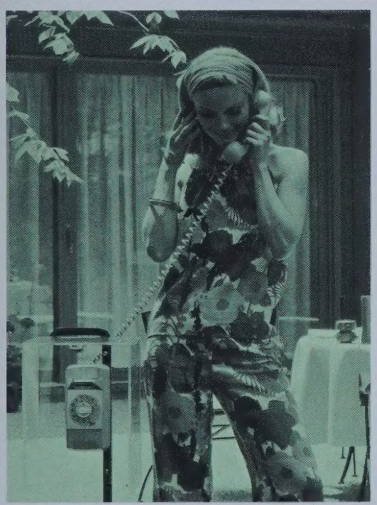
Mining Of Asarco's domestic copper mines, Silver Bell escaped the strike which affected Mission and San Xavier. Silver Bell concentrates produced during the strike were still in stockpile at the year-end because of limita-

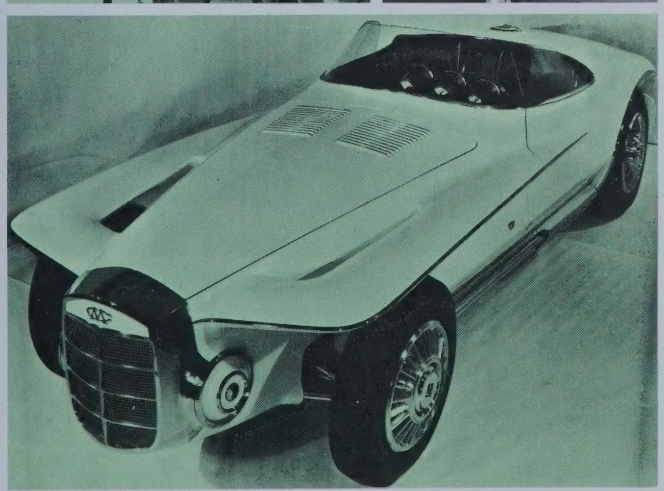
COPPER PRODUCTION (Tons)	1971	1970	1969
MINES			
Mission	40,600	47,700	50,000
Silver Bell	23,100	22,500	23,300
Quiruvilca	8,100	7,600	7,900
Others	4,000	5,600	5,200
Total	75,800	83,400	86,400
REFINERIES			
Baltimore	175,200	233,000	239,500
Perth Amboy	122,500	154,600	163,500
Tacoma	108,800	114,300	103,800
Total	406,500	501,900	506,800
ASSOCIATED COMPANIES			
Southern Peru[a]	141,200	149,100	134,200
Mount Isa Mines[b]	113,400	92,800	81,400
Asarco Mexicana[c]	25,400	27,100	25,900
Granduc[d]	19,100	1,300	—

[a]Blister output plus copper exported in concentrates—51.5% owned. [b]Metal content of products for fiscal year ended June 30—52.7% interest. [c]Blister output—49% owned. [d]Copper in concentrates—50% interest.

NOTE—All tonnages in this Annual Report are in short tons.

Striking good looks, excellent conductivity, and easy formability make copper desirable for sculpture • household utensils • computer and telephone wiring • automobile radiators, fuel lines, and disc brakes • diesel-electric motors and generators.





tions of smelter capacity. San Xavier production was limited to copper-bearing flux ore for use at Asarco's Hayden smelter.

Consideration of a fourth domestic copper mining project was advanced during the year with engineering studies for the development of the Sacaton deposit near Casa Grande, Arizona. Late in the year bids were obtained on the cost of equipping and constructing plant facilities and final decision on the project may be forthcoming in 1972.

Smelting and Refining Operations at Asarco's three copper smelters and three copper refineries were interrupted by a strike of employees on July 1. The smelters resumed production promptly in late August when agreement was reached with the workers. Due to the nature of the refining operation, an additional two weeks was required before full production was resumed at the refineries.

A new anode casting facility was approved for the Hayden, Arizona smelter at an estimated cost of $4 million. Scheduled for completion early in 1973, this improvement will result in substantial savings and also will allow some increase in Hayden copper production.

At the two Eastern seaboard copper refineries, operations were adversely affected by a decline in labor productivity. In addition to higher labor costs, there were sharp increases in the cost of fuel, power, and services at these plants. Management is emphasizing improvements in techniques to offset, where possible, these adverse factors.

Environment Maintaining the quality of the environment continued to be a major concern at all Asarco facilities during 1971. At the Mission Mine, 136,000 tons of soil were placed on the faces of the two tailings dams. Subsequently, these areas were seeded with grass,

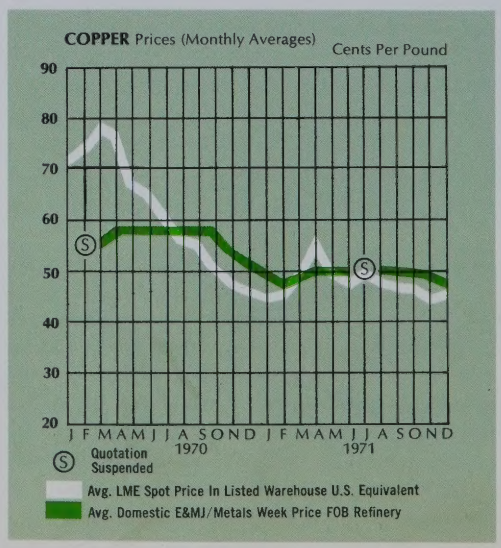
and eucalyptus trees were planted. In Peru, at the Quiruvilca Mine of Asarco's wholly-owned subsidiary, Northern Peru Mining Corporation, a treatment plant for neutralizing mine drainage and tailings water is being built as well as a new dam and tailings disposal system necessitated by earthquake damage to the existing dam. These installations, costing about $1,250,000, will be completed early in 1972.

Minimizing air and water pollution at our copper smelting and refining installations constitutes a major problem. Asarco's computerized weather-monitoring system, which curtails smelting during adverse meteorological conditions, resulted in production losses of 31,000 tons of copper at the El Paso and Tacoma smelters during 1971.

Heavy capital expenditures are being undertaken to meet the requirements of regulatory authorities. Sulfuric acid and liquid sulfur dioxide plants to treat the higher strength gases are the only presently proven and available facilities for removing sulfur dioxide from stack gases, and such plants are being installed at each of the copper smelters. However, markets for sulfuric acid and liquid sulfur dioxide in the areas where our plants are located are limited and disposal of these products will be a continuing problem. Asarco, together with Phelps Dodge, is investigating the conversion of SO_2 into elemental sulfur (see "Research and Exploration").

At Asarco's domestic copper plants alone, capital expenditures on the environmental improvement program will exceed $50,000,000, and increased operating costs will be in excess of any revenues that can be expected from sale of the sulfur by-products. To help finance this heavy cost, during 1971 Asarco obtained the agreement of the mines supplying copper-bearing materials to its smelters for a special surcharge of 1 to 1½ cents per pound of copper paid for. These surcharges are being reserved for the sulfuric acid plant at El Paso and the liquid SO_2 plant at Tacoma, which are estimated to cost jointly about $35,000,000. The sulfuric acid plant at Hayden was completed in late 1971 at a cost of $17,124,000.

Even with these heavy expenditures, compliance with regulations which have been proposed in Arizona and Washington State cannot be achieved. During the year, operating and executive personnel devoted much of their time to appearances before local, state and federal boards and officials concerned with environmental problems. The thrust of our presentations has been to develop the likely economic consequences of imposing arbitrary and unnecessarily rigid standards without adequate time for developing the necessary technology. We are hopeful that these efforts have resulted in the issues being better understood by the governmental authorities concerned.



"Silver" is synonomous with elegant tableware and coins. Silver compounds are essential in photographic film.

SILVER

Despite the fact that in 1971, for the first time in many years, the United States Treasury sold no silver, the silver market was weak. In early November the price dipped temporarily to $1.29 an ounce, the former statutory value of silver for monetary purposes. The average price for the year of $1.546 an ounce was $0.225 an ounce below 1970 and the lowest since 1966. Speculators, who had previously regarded silver as a hedge against monetary uncertainties, changed their minds. The price declined sharply in August and September after President Nixon announced termination of U.S. gold sales to foreign central banks.

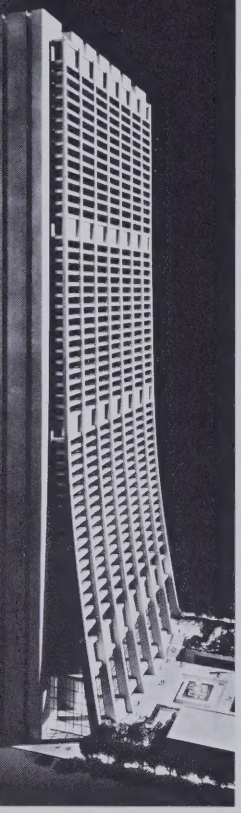
Since copper ores are an important source of silver, the strike in the copper industry was the primary reason for an approximately 8% drop in domestic silver production. Consumption of silver in the United States fell about 3% due to the decline in business activity. For the Free World as a whole, consumption is estimated to have exceeded new mine production by 137,000,000 ounces, but this gap was met by drawing down of speculative stocks and an indicated increase in salvage of silver from secondary sources.

In Idaho's Silver Belt, production of silver-copper ore at the underground Galena Mine was up about 8% over 1970. Work progressed at the 4600′ level, and a shaft was completed to 5300′ to provide for two new levels. A new tailings dam, which will blend into the existing topography, will be completed in 1972. Development work on the Coeur Project and Consolidated Silver Project proceeded according to plan; however, the Camp Project lease was terminated by Asarco in August following a reassessment of the project.

SILVER PRODUCTION (Troy Ounces)

	1971	1970	1969
MINES			
Galena	3,901,000	3,620,000	2,959,000
Quiruvilca	1,119,000	1,045,000	1,010,000
Buchans	538,000	1,146,000	1,301,000
Mission	489,000	624,000	660,000
Others	611,000	403,000	538,000
Total	6,658,000	6,838,000	6,468,000
REFINERIES			
Perth Amboy	42,740,000	39,534,000	42,582,000
Baltimore	13,562,000	13,035,000	15,037,000
Selby	9,000	18,523,000	27,860,000
Total	56,311,000	71,092,000	85,479,000
ASSOCIATED COMPANIES			
Asarco Mexicana[a]	15,333,000	17,420,000	16,706,000
Mount Isa Mines[b]	11,999,000	11,717,000	10,045,000
Granduc[c]	420,000	33,000	—
Neptune[d]	54,000	66,000	106,000

[a]Refined output—49% owned. [b]Metal content of products for fiscal year ended June 30—52.7% interest. [c]Metal content of products—50% interest [d]Metal content of products—51.8% owned.



Lead wool for caulking and lead sheet for soundproofing are a part of modern skyscrapers. Lead sheathed cable carries circuits for TV and telephones, electric energy for subway trains. Lead batteries power golf carts and other electric vehicles.

LEAD

Supply and Demand The battery industry was a prime factor in the relatively good demand for lead which prevailed in 1971. Shipments by U.S. primary refineries were 19% higher than in 1970, while imports of refined lead fell about 8% due partially to the dock strikes and the 10% import surtax in effect during part of the second half of the year. As a result, the burdensome inventories on hand at refineries on January 1, 1971 were sharply reduced and the domestic price rose from 13½¢ a pound to 14¢ a pound in mid-year.

Outside the United States consumption declined slightly. In addition to the unsatisfactory level of the economy in Western Europe and Japan, demand was affected by a continuing trend toward substitution of plastics for lead in cable sheathing. Prices on the London Metal Exchange drifted downward from about £110 a metric ton in January to below £90 in late November, but firmed after the U.S. 10% import surcharge was lifted in mid-December.

Mining The Leadville Unit in Colorado, an Asarco-managed joint venture with Newmont Mining Corporation, became a producing mine in April upon completion of the mill and surface plant. Full capacity of 20,000 tons of ore per month is expected to be achieved during the second quarter of 1972.

At the Buchans Mine in Newfoundland, a strike ended on November 12th after 21 weeks. Normal production was not attained again until December due to manpower shortages following the strike. Work on the Grey River tungsten ore body was discontinued after the results of tests on ore samples by the Canadian Department of Mines proved discouraging. The property is being held on a standby basis.

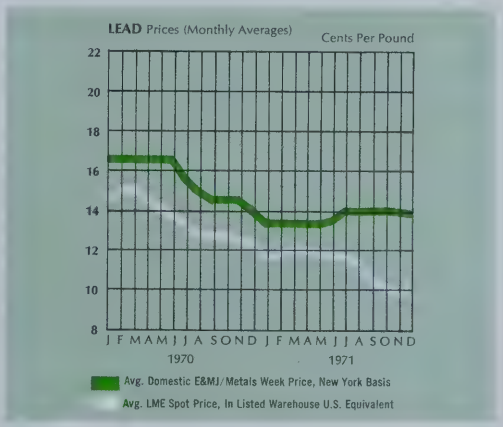
At the Ground Hog Mine in New Mexico, a lease was negotiated with the Black Hawk Consolidated Mines Company to mine known ore bodies extending from the Ground Hog Mine into the leased property.

Smelting and Refining While Asarco's plant at East Helena, Montana, operated at full capacity all year, profits were off because of a three-month strike at the nearby Anaconda zinc fuming plant which buys the slag produced as a by-product of our lead smelting operation. In 1971, Anaconda announced plans to close both the East Helena fuming plant and its slab zinc plant at Great Falls by mid-1972. The Great Falls plant provides about 30% of the charge for our smelter. Consequently, a major realignment of East Helena operations will become necessary. Asarco is negotiating with Anaconda for the purchase of the fuming plant.

The seven-month long strike at the Glover, Missouri plant ended in April with a contract extending to September 1, 1973.

The Omaha plant marked its 100th year of operation (it did not become a part of Asarco until 1899). It operated below capacity in 1971 because bullion shipments from the El Paso lead smelter were interrupted by the copper strike.

Environment The Montana air quality regulations, the strictest in the nation, pose a real dilemma to the East Helena smelter because the conventional method of removing sulfur dioxide from the stack gases by converting it to sulfuric acid is not feasible, there being presently no market for such a quantity of acid in Montana. While the regulations require compliance by mid-1973, they do provide for a variance procedure.



LEAD PRODUCTION (Tons)	1971	1970	1969
MINES			
Buchans	10,000	21,500	22,100
Leadville	4,000	—	—
Ground Hog	3,100	3,600	1,800
Others	1,600	3,300	5,700
Total	18,700	28,400	29,600
REFINERIES			
Omaha	122,500	131,000	121,500
Glover	66,500	59,200	45,800
Selby	—	35,800	40,000
Total	189,000	226,000	207,300
ASSOCIATED COMPANIES			
Mount Isa Mines[a]	162,200	168,400	131,400
Asarco Mexicana[b]	73,400	83,300	82,500
Neptune Gold Mining[c]	600	—	—

[a]Metal content of products for fiscal year ended June 30–52.7% interest. [b]Refined output–49% owned.
[c]Metal content of products–51.8% owned.

ZINC

Supply and Demand Increases of ½¢ a pound each in March and May and 1¢ a pound in July sent the domestic price of zinc to 17¢, its highest level since the post-Korean war period. Although consumption was about 5% above 1970, the principal reason for the strong domestic market was a 13% drop in smelter output as four smelters operated by other zinc producers closed in mid-1971 because of operating losses. A fifth such plant is expected to suspend operations in the second quarter of 1972, thereby reducing effective U.S. zinc-producing capacity by over one-third compared with 1970.

Imports of slab zinc, which in the past have met about 20 to 25% of domestic needs, can be expected to rise sharply while imports of concentrates for smelting in this country will fall. Not only will the nation's balance of payments suffer, but consumers here will be more strongly affected by the fluctuations of the European metal price.

Foreign zinc consumption showed little change in 1971, but production at some smelters was curtailed early in the year and, as in the United States, some European smelters closed for financial reasons. These moves enabled the remaining foreign smelter operators to keep metal inventories at reasonable levels and to advance the European producer price by over £20 a metric ton to £150 in an effort to meet cost increases. Mine production outside the United States exceeded concentrate sales to smelters. Sizable stocks of unsold concentrates have been accumulated by some mines. The U.S. and European closings plus the pollution problems of Japanese smelters appear, therefore, to have created a smelting-capacity bottleneck.

Mining In November, 1971, the Company purchased from American Zinc Company four zinc mines located in Tennessee. Included in this purchase were the mining properties and mill of the New Market Zinc Company, a joint venture owned by American Zinc and Gold Fields American Company. All these properties will be operated as part of the newly-created Eastern Mining Department headquartered in Knoxville, Tennessee.

Smelting and Refining Also purchased from

ZINC PRODUCTION (Tons)	1971	1970	1969
MINES			
Buchans	16,800	36,700	38,000
Ground Hog	14,700	14,200	6,100
Leadville	7,500	—	—
Quiruvilca	4,100	4,100	3,800
Others	—	8,300	15,100
Total	43,100	63,300	63,000
REFINERIES			
Corpus Christi	87,100	84,200	93,100
Amarillo	46,600	46,500	47,800
Total	133,700	130,700	140,900
ASSOCIATED COMPANIES			
Asarco Mexicana[a]	123,900	121,200	120,800
Mount Isa Mines[b]	100,700	102,300	87,700
Neptune Gold Mining[c]	3,800	—	—

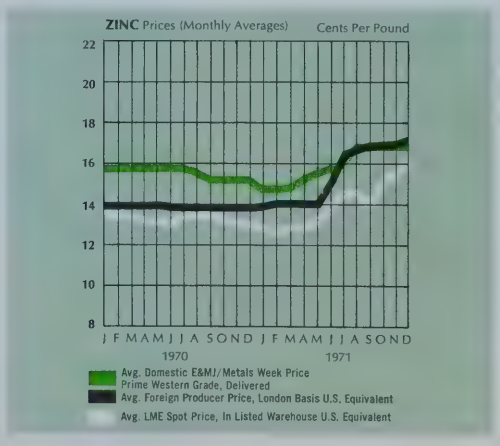
[a]Refined output plus metal content of concentrates and fume sold—49% owned. [b]Metal content of products for fiscal year ended June 30—52.7% interest. [c]Metal content of products—51.8% owned.

Zinc-coated steel makes bridges corrosion-resistant. Zinc die castings are strong, economical and attractive bodies for portable radios.

American Zinc Company in November, 1971, were two zinc oxide plants located in Hillsboro, Illinois and Columbus, Ohio. These plants utilize zinc concentrates produced by the Tennessee mines mentioned above. Zinc oxide is used primarily in manufacturing rubber products and paints and for coating paper used in office copying machines.

The Amarillo horizontal retort zinc smelter continued to operate under a variance issued by the Texas Air Control Board governing particulate emissions. Engineering investigations by an outside contractor are underway to determine if practical means can be found to control emissions from horizontal retort smelters.

Asarco's special high grade zinc refinery at Corpus Christi has for 29 years operated a sulfuric acid plant to minimize sulfur dioxide emissions. In 1971 $1.7 million was appropriated for a new water treatment plant at this refinery which will be of sufficient size to handle not only the normal plant effluent but rainwater runoff of up to 5 inches of rain in 24 hours. Construction commenced on a new, $3.5 million Lurgi fluid bed roasting installation to replace the present roasters. This will be completed in the spring of 1972.



Recycled Metals

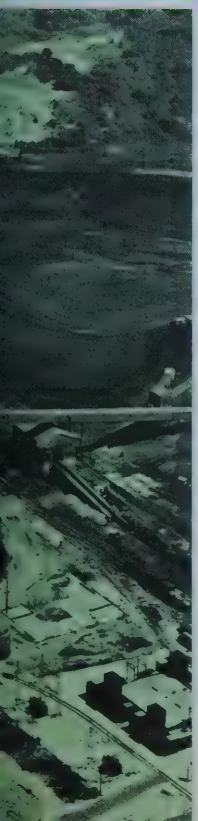
The importance of recycling solid waste into usable materials as a means of conserving the earth's supply of natural resources and constructively coping with the waste disposal problem has never been more appreciated than it is today. Asarco's Federated Metals Division has been recycling for years. In 1971 Federated converted 103,000 tons of non-ferrous scrap into some of the Federated products listed on the back cover.

Shipments of the Division's products were up 8% over 1970 despite the recession in the economy. Demand for zinc dust, used in the manufacture of chemicals and zinc-rich paints, was strong. An expansion of the Division's zinc dust production facilities is scheduled for completion early in 1972.

Federated's earnings in 1971 were adversely affected by the combination of weakness in secondary metal prices, the shutdown of production units at the Perth Amboy plant during the copper strike, and the erosion of margins due to keen competition for the available business. Contract settlements for most Federated plants covering a three-year period were successfully negotiated in November without a work stoppage.

In April 1971, Federated Metals Canada Limited and General Smelting Company of Canada Limited formed a new Canadian company, Federated Genco Limited. The new company, held 60% by Federated Metals Canada and 40% by General Smelting, acquired the assets of three plants operated by the two companies. This venture provides for increased diversification which should result in greater participation in the Canadian economy.

Bale of non-ferrous scrap at a Federated recycling plant • steel buckles blackened with Enthone's Ebonol® chemical blackening salts • Electric power generating plant using coal as source of energy.



Minerals and Chemicals

Asbestos Production of asbestos fibre decreased slightly in 1971 at Lake Asbestos of Quebec, Ltd., Asarco's wholly-owned subsidiary at Black Lake, Canada. However, the grades of fibre produced were of 6% higher value, and this, together with a price increase of 5% on July 1, resulted in improved earnings.

	1971	1970	1969
Production (Tons)	129,000	133,900	126,800
Sales (Tons)	123,000	131,000	123,900

Ore reserves suitable for open pit mining were increased substantially by an agreement with Asbestos Corporation Ltd. for mining on property adjacent to that of Lake Asbestos.

Cement Asbestos Products Company, 49% owned by Asarco, brought an additional new asbestos cement pipe plant into production in Van Buren, Arkansas, in July.

Coal About 4,000,000 tons of washed coal were produced in 1971 by the Midland Coal Company Division from the properties acquired in late 1970 from Peabody Coal Company. Production was hampered by the six week national coal strike and the impact of the new Federal Coal Mine Health and Safety Act. The Division operated below planned production levels, and efforts are being made to improve operating efficiencies both by increased capital expenditures for plant and equipment and by improved equipment maintenance procedures.

Ilmenite A contract has been awarded for construction of the plant and auxiliary buildings at Asarco's ilmenite mine in Manchester Township, near Lakehurst, New Jersey. Beginning about April 1973, 20,000 tons of ore per day will be mined and the titanium-bearing mineral will be separated out in two new plants. The finished concentrates will be shipped to E. I. du Pont de Nemours & Company in Edge Moor, Delaware. There the concentrates, containing about 63% titanium dioxide, will be used to manufacture white pigment for paint, plastics, and paper.

A ten-year contract with Du Pont to supply up to 165,000 long tons of ilmenite concentrates per year was finalized in September. Estimated cost of the project, including the suction dredge to be used for mining, is over $15 million.

Limestone The American Limestone Division in Tennessee was acquired from American Zinc Company in November. In addition to agricultural limestone, it produces and markets locally sand, gravel, crushed rock, and ready-mix concrete.

Specialty Chemicals In the face of general business sluggishness, Enthone, Inc., wholly-owned subsidiary of Asarco, maintained its 1970 sales pace in 1971. Broad acceptance of products developed in recent years by this research-oriented firm was mainly responsible for this relatively good showing. Enthone chemicals are used primarily in plating and metal finishing. Acquisition in January 1971 of Ionic International, Inc., a manufacturer of automatic plating equipment, enabled Enthone to provide complete plating systems.

World Operations

M.I.M. Holdings Limited *(52.7% owned by Asarco)* For fiscal 1971, which ended on June 30th, tonnages of copper, zinc, and silver sold by Mount Isa Mines Limited (ISA), a subsidiary of MIM, increased, but lower metal prices and higher operating costs combined to reduce sharply the consolidated net earnings of MIM to $A37,957,000 from the record $A55,421,000 earned in fiscal 1970. Copper production set a new record of 113,400 tons as did silver production of almost 12,000,000 troy ounces.

The weak world demand for lead prompted a decision by MIM management in February 1971 to reduce lead production and increase copper production at ISA. Also, capital works programs designed to increase copper productive capacity to 170,000 tons per year were accelerated while expenditures for expansion of the Hilton lead-zinc-silver mine and lead smelter were stretched out over a longer time period.

ISA is still MIM's principal source of income, but other subsidiaries make important contributions and diversification is being actively pursued.

Among the subsidiaries, Copper Refineries Pty, Ltd. at Townsville achieved record output but returned a lower profit because of increasing costs of labor, power, and supplies. Refinery capacity was increased to handle the additional supplies of blister copper from ISA. A new office building, Mount Isa House, in the center of Townsville was also completed. Output of refined lead by wholly-owned Britannia Lead Company Limited at its plant in Northfleet, England, was below that of last year because of reduction in ISA output. Silver refinery capacity was increased 20% to 12,000,000 troy ounces per year.

Diversification moves included a 25% participation in McCamey Iron Associates, a venture to develop iron ore deposits in the Pilbara area of Western Australia which are collectively known as McCamey's Monster and Western Ridge, and acquisition of a 16.9% interest in Thiess Holdings Limited, which controls large coal reserves in the Bowen Basin of Queensland. MIM is already a significant producer of coal through its subsidiary, Bowen Consolidated Coal Mines Limited, which mined 266,600 tons of coking coal in the fiscal year.

Southern Peru Copper Corporation *(51.5% owned by Asarco)* Net earnings of Southern Peru dropped to $26,214,000 in 1971 from $37,432,000 in 1970, due principally to strike-caused production losses and a drop in the average price received for copper to 47.7¢ per pound from 55.8¢ per pound.

In June, the Government decreed the General Mining Law which among other things provided for the establishment of a "Mining Community" for each mining company. Through these Communities the workers are to receive a portion of the Company's pre-tax profits by way of cash and ownership participation. However, by the year's end, regulations to implement this law had not been issued. The Mining Law also established the Government as the sole marketer of copper, effective October 14, 1971. At the year's end, copper was continuing to be marketed through normal channels, except for about 13% of the blister copper production which had been committed by the Government of Peru to the Peoples Republic of China. Negotiations are continuing with the Government's commercial entity, Empresa Minera del Peru, for a contract to define the working relationship between the Company and the Peruvian Government entity.

During the year, approximately $18,000,000 was spent on the Cuajone copper orebody,

Mine shaft headframe at Mount Isa in Australia with mine office in background • North rim of Cuajone open pit mine site in Peru • Ore train emerging from tunnel at Inguaran Mine in Mexico.

bringing the total investment at year end to $45,664,000 including mineral land. In June, the Government approved a 15-months' work program to begin October 1 involving the expenditure or commitment of approximately $48,000,000 of Southern Peru's own funds by December 31, 1972. Principal work accomplished during the year was the driving of 13,250 feet of railroad tunnel, removing 16,721,000 tons of overburden from the mine, preparation of terrain for future townsites, and the installation of a power line from Toquepala. For Cuajone to be brought into production under the timetable provided in the Bilateral Agreement with the Government of Peru, financing arrangements will have to be completed during 1972. While progress in this regard has been slowed by economic and other conditions, we are now hopeful that the goal will be met.

Asarco Mexicana, S.A. *(49% owned by Asarco)* Operations at the mines and plants of Asarco Mexicana were normal during 1971 with the exception of the Chihuahua lead smelter which experienced break-in problems with the new updraft sintering plant. Dividends totaling $3,840,000 (of which Asarco received $1,883,000) were paid in April. Capital expenditures amounted to $13,879,000. Labor contracts effective until 1973 were renegotiated early in the year for all plants and all mines except San Martin.

The new mill at the Inguaran Mine began operation in the first quarter, processing 2200 tons of copper ore per day. Also, the new 350 ton-per-day mill at the San Antonio mine of the Santa Eulalia Unit was completed. Mechanization of the Sabinas No. 2 coal mine at Nueva Rosita was practically completed. Production of coking coal is well on the way to reaching the goal of 55,000 tons per month.

Research & Exploration

Major mine development work continued at the Santa Barbara, San Martin, and Taxco Mines, and mine expansion studies are underway at the latter two and at the Fluorita Mine. The construction of a copper refinery should begin during 1972.

At the La Caridad property of Mexicana de Cobre, S.A. (49% owned by Asarco Mexicana) work continued on designing the optimum plan for developing this major porphyry copper ore body.

Neptune Gold Mining Company *(51.8% owned by Asarco)* Production of lead and zinc at the new Vesubio Mine started in September. The concentrator will produce about 2800 tons of zinc concentrates and 500 tons of lead concentrates per month for smelting at Asarco plants in the United States. The mill is also capable of handling up to 300 tons of gold ore per day. The possibility of cost savings from the combined operation and higher prices for gold may make it profitable to treat lower grade gold ores of which there are substantial reserves.

Granduc *(50% Asarco Interest)* The Granduc Mine near Stewart, British Columbia, a joint venture lease managed by Newmont Mining Corporation, in which Asarco holds a fifty percent interest, operated throughout the year. Numerous startup difficulties were experienced and a substantial loss resulted. For the year, Asarco's share of the loss was $3,290,000 after providing for depreciation and depletion charges of $1,095,000 and a write-down to market of concentrate inventories amounting to $1,175,000. At year end, production was still not up to the planned rate. Mining methods and operating procedures have been rigorously reviewed. Present projections indicate the mine may avoid a loss exclusive of depreciation and depletion charges during the first half of 1972.

Research Dedication in September of the Elemental Sulfur Pilot Plant, sponsored jointly by Asarco and Phelps Dodge Corporation, at our El Paso smelter highlighted a year of significant research activity. The pilot plant will investigate the feasibility of converting sulfur dioxide in smelter gases to elemental sulfur on a semi-production basis as a means of improving air quality. Sulfur is more readily stored and shipped to distant markets than is sulfuric acid, the usual by-product of SO_2 conversion.

A related research project was sponsored by the Smelter Control Research Association, which was formed early in the year by Asarco and other copper smelting companies. It involved construction of a pilot plant to test methods of removing SO_2 from smelter gas streams low in SO_2 content by limestone slurry techniques. Other industry-wide research and development organizations in which the Research Department participates actively include the International Copper Research Association, the International Lead-Zinc Research Organization, the Copper Development Association, and the Selenium-Tellurium Development Association.

The Federal Government's Occupational Health and Safety Act requires low industrial noise levels, and Asarco's Acoustilead continuous cast lead sheet is being tested for numerous applications. Many other research projects were carried on relating to potential new markets for our products and improvements in our production processes.

Exploration Activities during 1971 were concentrated in the United States and other politically stable areas.

In Arizona, deep drilling to search for buried disseminated copper yielded mild encouragement at several prospects; more drilling will be required for proper evaluation. Exploration in Alaska was intensified. A full program was carried out in Australia, and a number of properties were acquired in the Western Australian nickel belt.

Financial Review

Earnings and Dividends Net earnings were $46,013,000, or $1.72 per share, compared with $88,803,000, or $3.16 per share in 1970, exclusive of extraordinary items. In 1970, there were, in addition, extraordinary gains of $22,915,000, or $0.81 a share.

A number of unfavorable factors contributed to the lower earnings in 1971. These included the nationwide copper and coal strikes; sharply higher costs; lower average domestic and world prices for copper, lead, and silver; and the continuation of the business recession in the United States and its spread to Europe and Japan. Also, earnings reflected losses at the Granduc Mine and at the Midland Coal Company Division.

At its meeting on October 26, 1971, the Board of Directors declared a dividend of $0.30 a share payable November 30. This compared with the previous rate of $0.475 which on an adjusted basis had been in effect since the first quarter of 1969. In taking this action, the Board of Directors cited existing uncertainties in business conditions and the effects of increased costs of labor and of pollution control at the Company's plants at a time when metal prices had declined. The adjustment in the dividend rate brought the dividend more in line with earnings and the requirements for substantial capital expenditures to maintain the strength of the Company and to provide for its future growth.

Investments Revere Copper & Brass Inc. is the principal investment not reported on an equity basis. Asarco owns 1,876,296 shares of common stock (33.4%) and $22,763,000 principal amount of Convertible Debentures. Dividends received on the common stock were $1,407,000 in 1971 compared with $2,345,000 in 1970. No dividend was declared for the fourth quarter of 1971 nor for the first quarter of 1972. In 1971 earnings per share of Revere common stock were 58¢, before extraordinary charge of 32¢, compared with $1.62 in 1970. This decline reflects unusually difficult competitive conditions in the copper and brass fabricating and aluminum industries.

Capital Expenditures Capital expenditures were $55,378,000 compared with $72,186,000 in 1970. Included in capital expenditures was $23,879,000 for properties purchased from American Zinc Company and Gold Fields American Corporation, which does not include the working capital also acquired.

Compared with $17,057,000 at the end of 1970, unexpended property appropriations at the end of 1971 were $67,438,000. The El Paso acid plant and the New Jersey Heavy Minerals Project are the largest items in this total. Substantial additional appropriations will be required in 1972 for facilities for increased production and additional air quality control.

Capitalization During the year 30,900 shares of Asarco stock were purchased and 64,548 shares were used for employee compensation plans and for the acquisition of Ionic International, Inc., leaving 26,778,573 shares outstanding at the year end. The Company expects to continue its policy of buying stock from time to time for employee compensation plans and other corporate purposes.

Also during the year 2,078,921 Asarco shares held in the Treasury were cancelled creating capital surplus of $6,792,000. These shares had been acquired as a result of the Company's 1970 offer to exchange General Cable stock and cash for Asarco stock tendered the Company.

The Company purchased $52,000 par value of its Debentures in 1971. At the year end, sinking fund obligations amounting to $1,637,000 of Debentures a year had been covered through 1975.

Current Financial Position With earnings considerably reduced, total cash flow, including depreciation, depletion and other non-cash charges against income, fell considerably short of dividends plus property expenditures with the result that working capital declined by $18 million to $174 million. Increases in inventories, accounts receivable and miscellaneous working capital tied up additional amounts of cash. To finance the shortfall, $28 million of short term bank loans were entered into and $18 million 5-year Serial Notes were delivered to American Zinc Company and Gold Fields American Corporation as part payment for the purchase of assets referred to earlier in this Report. Cash at the end of the year amounted to $10,379,000 compared with cash and marketable securities of $17,858,000 at the beginning of the year.

Raw and in-process inventories increased considerably as a result of the strikes at the copper plants. With a more normal level for these inventories and some strength in the metal markets we could expect a liquidation of inventories of at least as much as the $28 million in bank loans outstanding at the year end.

The Company continues to have a strong balance sheet and to be in a position to take advantage of attractive opportunities for profitable investment that may become available.

Consolidated Balance Sheet

AMERICAN SMELTING AND REFINING COMPANY
AND CONSOLIDATED SUBSIDIARIES

ASSETS	December 31, 1971	December 31, 1970
Current Assets:		
Cash	$ 10,379,000	$ 12,915,000
Marketable securities (at cost, which approximates market)	—	4,943,000
Accounts receivable—less reserve	73,265,000	64,403,000
Inventories (note 2)	217,220,000	212,177,000
Materials and supplies	23,595,000	19,284,000
Prepaid expenses	1,043,000	503,000
Total Current Assets	325,502,000	314,225,000
Miscellaneous Assets	10,256,000	12,910,000
Property (notes 1 and 3):		
Buildings and equipment	367,050,000	333,589,000
Mineral land	100,123,000	92,268,000
Land, other than mineral	17,598,000	12,666,000
Automobiles	2,129,000	2,018,000
	486,900,000	440,541,000
Less: Depreciation, depletion and amortization	186,563,000	175,203,000
Net Property	300,337,000	265,338,000
Investments in Companies Approximately 50% Owned (notes 4 and 5)	230,332,000	220,217,000
Investments—Other (at cost or less, note 5)	39,540,000	45,652,000
	$905,967,000	$858,342,000

See Summary of Accounting Policies and Notes to Financial Statements

Summary of Accounting Policies

Principles of consolidation—The consolidated financial statements include all subsidiaries 100% owned.

Investments in companies approximately 50% owned (M.I.M. Holdings Limited 52.7%, Southern Peru Copper Corporation 51.5%, Asarco Mexicana, S.A. 49%, and several smaller companies) are carried at cost plus equity in undistributed earnings since acquisition. Such earnings of foreign companies are translated into U.S. dollar amounts at average exchange rates prevailing during the year.

Foreign currency—Accounts of foreign branches and consolidated subsidiaries are translated into U.S. dollar amounts as follows: (a) current assets and liabilities at rates prevailing on balance sheet date, (b) all other assets and liabilities including property and related depreciation and depletion at historical cost, (c) income and expense items (except depreciation and depletion) at average rates prevailing during the year, and (d) realized gains and losses reflected in earnings, but unrealized gains deferred except to extent offset by prior provisions for unrealized losses.

Inventories—Metals at primary smelters and refineries and at secondary metals plants are at last-in first-out cost (LIFO). Metals at mines are at first-in first-out cost (FIFO). Values are written down to market, if lower than cost. Primary metals sold at firm prices for future delivery are at sales price.

Property — Fixed assets are carried at cost or less. When retired or otherwise disposed of, the related carrying value and accumulated depreciation, depletion or amortization are cleared from the respective accounts and the net difference, less any amount realized from disposition, is reflected in earnings.

Depreciation, depletion and amortization—Property placed in service beginning in 1971 at all plants is depreciated over its estimated life using the straight-line method.

LIABILITIES	December 31, 1971	December 31, 1970
Current Liabilities:		
Bank loans	$ 28,410,000	$ —
Notes and accounts payable	97,410,000	83,993,000
Salaries and wages accrued	4,423,000	4,511,000
Accrued taxes:		
U.S. and foreign taxes on income	6,593,000	19,508,000
Other	6,420,000	6,927,000
Miscellaneous	8,565,000	7,573,000
Total Current Liabilities	151,821,000	122,512,000
Long Term Debt (note 6):		
4⅝% Twenty-Five Year Subordinated Debentures, due October 15, 1988	23,684,000	23,736,000
Notes payable	14,400,000	—
	38,084,000	23,736,000
Non-Current Accounts Payable	8,311,000	6,844,000
Deferred Credits (note 7)	32,413,000	29,598,000
Reserves (note 8)	1,998,000	2,806,000
STOCKHOLDERS' EQUITY (notes 4 and 9, and page 21)		
Preferred Stock		
Authorized—10,000,000 shares without par value (none issued)		
Common Stock		
Authorized—40,000,000 shares without par value		
Issued—27,678,223 shares; 1970—29,757,144 shares	339,239,000	364,719,000
Capital Surplus	6,792,000	—
Earnings Employed in the Business	349,164,000	349,398,000
	695,195,000	714,117,000
Less: Treasury Stock, at cost—899,650 shares; 1970—3,012,219 shares	21,855,000	41,271,000
Total Stockholders' Equity	673,340,000	672,846,000
	$905,967,000	$858,342,000

Property placed in service at primary smelters and refineries between 1961 and 1970 is depreciated using accelerated methods, and property placed in service prior to 1961 is depreciated using the straight-line method.

Property placed in service at secondary metals plants prior to 1971 is generally depreciated using the straight-line method.

Depreciation and depletion at mines are generally computed on the ore reserve method.

Deferred income taxes—Tax benefits resulting from allowable deductions taken in income tax returns for depreciation and mine development in excess of the amounts charged against earnings in the accounts are deferred. The amount deferred is included in the caption "Deferred Credits" and is being transferred to earnings as the related depreciation and depletion are charged to earnings.

Copper surcharges—In May 1971, the Company commenced collecting surcharges from shippers of copper-bearing materials to Company smelters. Surcharges collected are reserved for construction of designated pollution abatement facilities and, therefore, are being deferred in the accounts until operations of the facilities begin. The amount deferred is included in the caption "Deferred Credits" and will be transferred to earnings as the depreciation on the related facilities is charged to earnings.

Research and development expenses for new products or improvement of existing products are charged against earnings in the year incurred.

Exploration expenses—Tangible and intangible costs incurred in the search for new mining properties are charged against earnings when incurred. When a commercial ore body is discovered, the related exploration costs previously expensed are capitalized and credited to earnings.

Consolidated Statement of Earnings

AMERICAN SMELTING AND REFINING COMPANY
AND CONSOLIDATED SUBSIDIARIES

	Year Ended December 31, 1971		Year Ended December 31, 1970	
Sales of Products and Services	$656,757,000		$717,836,000	
Costs of Products and Services—exclusive of items deducted separately below	598,914,000		627,778,000	
	57,843,000		90,058,000	
Equity in Earnings of Companies Approximately 50% Owned	37,438,000		58,119,000	
Dividends, Interest and Miscellaneous Income	5,828,000		13,986,000	
	101,109,000		162,163,000	
Deductions:				
Exploration and research expenses	11,234,000		12,578,000	
Selling, administrative and miscellaneous expenses	20,308,000		19,947,000	
Depreciation and depletion (note 3)	17,886,000		15,223,000	
	49,428,000		47,748,000	
Earnings before U.S. and Foreign Taxes on Income and before Extraordinary Items	51,681,000		114,415,000	
U.S. and Foreign Taxes on Income (note 11)	5,668,000		25,612,000	
		Per Share*		Per Share*
Earnings before Extraordinary Items	46,013,000	$1.72	88,803,000	$3.16
Extraordinary Items, net of income tax of $7,627,000	—	—	22,915,000	.81
Net Earnings	$ 46,013,000	$1.72	$111,718,000	$3.97
*Based on average number of shares outstanding	26,802,076		28,156,657	

Extraordinary Items include gain on General Cable stock sold $31,545,000, net of income tax; loss from cancellation of Michiquillay mining concessions, estimated at $4,686,000, net of income tax credit; loss from closing of Selby plant, estimated at $3,944,000, net of income tax credit.

See Summary of Accounting Policies and Notes to Financial Statements

Development costs to bring new mineral properties into production, and for major programs of a special nature at existing mines are capitalized and amortized on the ore reserve method when production begins.

Maintenance and repairs are charged to operating expenses. Costs of betterments and renewals are capitalized and property replaced is accounted for as a retirement.

Retirement Plans—Current service costs are funded and charged to earnings each year. Prior service costs are funded and amortized over a period of 25 years.

Investment tax credits are accounted for using the flow-through method which reduces Federal income tax expense for the year in which qualified property is placed in service.

Notes to Financial Statements

1. Acquisition of Zinc Properties On November 29, 1971 the Company purchased from American Zinc Company and Gold Fields American Corporation their Tennessee zinc mines, two zinc oxide plants and the American Limestone Division for $28,600,000 including $18,000,000 in 6% notes payable in five equal annual installments. The Company will also make additional payments for five years following the purchase, contingent upon the published price for Prime Western Zinc exceeding 15¢ per pound. The contingent payments will be capitalized.

2. Inventories Inventories of smelters, refineries and secondary metals plants include $102,568,000 (1970—$118,262,000) at LIFO cost, reflecting some unearned profits of indeterminable amount, $43,912,000 (1970—$39,180,000) at provisional cost of metals purchased for which prices had not yet been fixed, and

Consolidated Statement of Stockholders' Equity (Note 4)

AMERICAN SMELTING AND REFINING COMPANY AND CONSOLIDATED SUBSIDIARIES

(dollars in thousands)

	1971		1970	
	Shares	Amount	Shares	Amount
Common Stock without par value				
Authorized—40,000,000 shares				
Issued:				
Beginning of year	29,757,144	$364,719	29,757,144	$364,719
Cancelled	2,078,921	25,480	—	—
End of Year	27,678,223	339,239	29,757,144	364,719
In Treasury:				
Beginning of year	3,012,219	41,271	822,235	19,263
Purchased	30,900	562	151,584	4,109
Acquired pursuant to exchange offer and subsequently cancelled	(2,078,921)	(18,688)	2,078,921	18,688
	964,198	23,145	3,052,740	42,060
Used:				
For additional compensation and stock options exercised	40,548	805	40,521	789
For acquisition of a company	24,000	485	—	—
	64,548	1,290	40,521	789
End of year	899,650	21,855	3,012,219	41,271
Outstanding end of year	26,778,573	317,384	26,744,925	323,448
Capital Surplus from cancellation of common stock		6,792		—
Earnings Employed in the Business				
Beginning of year as previously reported				295,289
Less: Adjustment for prior years				3,716
Restated balance at beginning of year		349,398		291,573
Net earnings		46,013		111,718
		395,411		403,291
Cash dividends declared 1971—$1.73 per share; 1970—$1.90		46,247		53,893
End of year		349,164		349,398
Total Stockholders' Equity		$673,340		$672,846

On April 28, 1970, the stockholders authorized 10,000,000 shares of preferred stock without par value for issue in such series and on such terms as may be fixed by the Board of Directors.

See Summary of Accounting Policies and Notes to Financial Statements

$48,738,000 (1970—$36,267,000) at sales prices for metals sold at firm contracts for future delivery. Inventories of mines aggregate $15,274,000 (1970—$11,203,000) at FIFO cost. Inventory values do not exceed market.

3. Property In 1971 the Company adopted the policy of computing depreciation on newly acquired property units on the straight-line method. In previous years depreciation on newly acquired property units was computed by accelerated or straight-line methods, and such methods are being continued for property units acquired prior to 1971. The effect of this change on 1971 earnings and earnings per share was not material.

4. Stockholders' Equity In 1971 the Company cancelled 2,078,921 shares of common stock thereby reducing the stated capital of the Company by $25,480,000, the amount at which the shares were carried in Common Stock. The cancelled shares had been reacquired in 1970 pursuant to an exchange offer, and carried as Treasury Stock at cost of $18,688,000. The difference of $6,792,000 has been credited to Capital Surplus.

Asarco Mexicana, S.A., accounted for by the equity method, estimated its unrecorded liability for voluntary retirement compensation as of December 31, 1970 to be $7,584,000 (U.S. currency equivalent, net of Mexican income tax). Beginning in 1971, in accordance with generally accepted accounting principles, provision for voluntary retirement compensation is being made on a current basis. Earnings Employed in the Business and Investments in Companies Approximately 50% Owned have been restated by $3,716,000 to reflect the Company's 49% share of the unrecorded liability. The effect on net earnings applicable to any individual prior year was not material.

5. Investments In June 1971, a new Peruvian mining law provided, among other things, that workers,

Consolidated Statement of Changes in Financial Position

AMERICAN SMELTING AND REFINING COMPANY AND CONSOLIDATED SUBSIDIARIES

	1971	1970
Cash and marketable securities, beginning of year	$17,858,000	$ 69,997,000
Source of Funds:		
Earnings before extraordinary items	46,013,000	88,803,000
Add—expenses not requiring outlay of funds:		
Depreciation and depletion	17,886,000	15,223,000
Deferred income taxes	31,000	3,782,000
Equity in earnings of companies approximately 50% owned, in excess of dividends received	(6,442,000)	(12,974,000)
Funds provided from operations, exclusive of extraordinary items	57,488,000	94,834,000
Extraordinary items:		
Income tax savings related to property losses of $8,630,000	—	3,222,000
Proceeds from sale of investment, less related income tax effects	—	34,751,000
Investments, net	2,439,000	977,000
Bank loans	28,410,000	(2,329,000)
Notes and accounts payable and accrued expenses	899,000	(1,599,000)
Treasury stock, net	728,000	(3,320,000)
Other, net	139,000	(3,945,000)
	90,103,000	122,591,000
Use of Funds:		
Property expenditures:		
Purchase of operating plants and mines	23,879,000	27,283,000
Less—liabilities assumed (note 1)	18,000,000	3,000,000
	5,879,000	24,283,000
Other	31,499,000	44,436,000
	37,378,000	68,719,000
Accounts receivable	8,862,000	(9,418,000)
Inventories	5,043,000	42,631,000
Subordinated debentures purchased	52,000	217,000
Dividends	46,247,000	53,893,000
Treasury stock reacquired pursuant to exchange offer (note 4)	—	18,688,000
	97,582,000	174,730,000
Cash and marketable securities, end of year	$10,379,000	$ 17,858,000

See Summary of Accounting Policies and Notes to Financial Statements

through "Mining Communities", must be given increasing participation in profits and ownership (eventually to 50%) of mining enterprises. Regulations for implementing the law have not yet been issued and, therefore, the ultimate effects of this legislation on the Company's equity investment in Southern Peru Copper Corporation and also on the net assets of the Company's consolidated subsidiary, Northern Peru Mining Corporation, which at December 31, 1971 amounted to $100,874,000 and $7,825,000, respectively, cannot be presently determined.

Investments — Other, at December 31, 1971, includes securities carried at a book value of $35,000,000 which had a quoted market value of $45,800,000.

6. Long Term Debt Sinking Fund payments of $1,637,000 on Debentures are required annually on October 14. Debentures have been purchased covering payments through 1975. Notes payable relate to acquisition of zinc properties (note 1).

7. Deferred Credits Tax benefits of $30,103,000 (1970 —$29,024,000) resulting from timing differences between book income and taxable income have been deferred and are included in this caption on the balance sheet. Also included are surcharges of $1,662,000 collected in 1971 from shippers of copper-bearing materials.

8. Reserves The Additional Compensation Reserve has a balance of $1,471,000 (1970—$2,372,000). In 1971, $1,182,000 (1970—$3,351,000) was appropriated to the reserve from earnings, $273,000 (1970—$320,000) was paid to officers and major executives, and $1,810,000 (1970—$3,059,000) was allotted to other employees.

9. Stock Options A qualified stock option plan was approved by stockholders in 1967. Options are granted at fair market value on date of grant and may be exercised any time within five years. All options exercised during the year were at $25.85 and options outstanding at year end were at prices ranging from $25.85 to $28.94 per share.

	Number of Shares		
	Authorized	*Granted*	*Exercised*
Beginning of year	800,000	319,274	72,739
Transactions in 1971	—	17,382*	3,000
End of year	800,000	301,892	75,739

*Lapsed

10. Retirement Plans The Company's retirement plans cover substantially all employees. Normal retirement age is 65 but the plans provide for earlier retirement. New labor agreements covering major segments of the Company's business, which became effective late in 1971, provide for higher retirement benefits which will significantly increase the costs of the plans.

Unfunded prior service costs at December 31, 1971 were approximately $46,770,000 (1970—$34,910,000). The charge to earnings in 1971 for both current and prior service costs was $7,180,000 (1970—$6,760,000). The actuarially computed value of vested benefits at latest valuation date exceeded the total of the retirement funds by $17,814,000 (1970—$15,430,000).

11. U.S. and Foreign Taxes on Income The 1971 provision includes deferred taxes of $31,000 (1970—$693,000 including amount in Extraordinary Items) and reductions of $912,000 for utilization of foreign tax credit carryforward and $1,340,000 for investment tax credits.

12. Litigation On December 31, 1971, there were pending four private actions against the Company alleging damages to named plaintiffs caused by alleged air pollution, and seeking punitive damages and injunctive relief. One action purportedly on behalf of a class remains pending before the Supreme Court of the State of Arizona, on review of an order of the trial court dismissing the class action allegation.

There is pending in the District Court of El Paso County, Texas, an action instituted in 1970 by the City of El Paso seeking injunctive and other relief with respect to alleged emissions of air pollutants by the Company's smelter located in El Paso.

Actions under the antitrust laws begun in 1970 by two copper fabricating companies and their subsidiaries against the major U.S. copper producers, including Asarco, remain pending after transfer to the Federal District Court for the Southern District of New York.

In November, 1971 the Company entered into a settlement agreement, subject to court approval, which would terminate the action instituted in June 1970 by the Papago Indian Tribe in connection with the Company's San Xavier copper project. This agreement also would resolve certain other outstanding issues between the parties, not directly involved in this litigation. Objections to the settlement were filed by a few members of the Tribe. These objections, deemed by the Company's trial counsel to be insubstantial, are to be heard by the court late in February or early in March, 1972.

Pre-trial procedures continued in the suit instituted in November, 1969, in the Superior Court of the State of Arizona by a farming organization seeking injunctive relief against a cattle company and six mining companies, including Asarco, having operations south of Tucson in the Santa Cruz Valley. The plaintiff alleges that the defendant companies are illegally pumping and transporting ground water for use in their operations. In September 1971, the complaint was amended to seek compensatory and punitive damages.

It is the opinion of the Company and its counsel that the outcome of the suits mentioned, and of other miscellaneous litigation and proceedings now pending, will not materially affect the operations or the financial position of the Company or of any of its subsidiaries.

AUDITORS' REPORT

To the Board of Directors and Stockholders of
American Smelting and Refining Company:

We have examined the consolidated balance sheet of American Smelting and Refining Company and Consolidated Subsidiaries as of December 31, 1971, and the related consolidated statements of earnings, stockholders' equity and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We previously examined and reported upon the consolidated financial statements of the Company for 1970.

In our opinion, subject to the ultimate effects of the implementation of the legislation referred to in Note 5, the consolidated financial statements mentioned above present fairly the financial position of American Smelting and Refining Company and Consolidated Subsidiaries at December 31, 1971 and 1970 and the results of their operations and the changes in their financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

LYBRAND, ROSS BROS. & MONTGOMERY

New York, February 25, 1972

Ten-Year Financial Summary

AMERICAN SMELTING AND REFINING COMPANY AND CONSOLIDATED SUBSIDIARIES

(dollar amounts in millions except for per share data)

	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962
Earnings										
Net Earnings	$ 46.0	$111.7	$100.8	$ 78.6	$ 71.3	$ 90.2	$ 75.5	$ 61.1	$ 42.6	$ 39.4
Extraordinary Items, net of income tax, included above	—	22.9	1.4	5.4	7.5	1.0	3.7	3.0	—	—
Return on Common Stockholders' Equity	6.8%	16.6%	15.7%	13.4%	12.7%	17.3%	16.1%	14.0%	10.1%	8.9%
Depreciation and Depletion	17.9	15.2	15.2	12.9	10.6	11.0	11.5	13.5	13.3	13.7
Common Stock										
Cash Dividends*	$ 46.2	$ 53.9	$ 55.2	$ 38.2	$ 32.7	$ 36.1	$ 30.8	$ 23.3	$ 14.8	$ 12.6
Per Share:**										
Net Earnings	1.72	3.97	3.47	2.70	2.45	3.10	2.59	2.06	1.36	1.23
Extraordinary Items, net of income tax, included above	—	.81	.05	.18	.26	.04	.13	.10	—	—
Cash Dividends	1.73	1.90	1.90	1.31	1.13	1.24	1.05	.79	.50	.43
Book Value	25.14	25.16	22.14	20.17	19.26	17.94	16.09	14.68	13.42	13.90
Average Shares Outstanding (in millions)**	26.8	28.2	29.1	29.1	29.1	29.1	29.1	29.7	29.5	29.1
Number of Stockholders	63,500	50,900	38,300	27,400	27,300	25,300	22,800	22,050	21,650	22,450
Financial Position										
Total Assets	$906.0	$858.3	$824.6	$771.7	$698.6	$674.6	$617.0	$575.4	$522.3	$538.5
Working Capital	173.7	191.7	204.9	185.9	186.7	213.5	191.7	186.2	165.1	180.2
Capital Expenditures in year	55.4	72.2	25.0	37.2	46.7	36.2	10.9	11.4	7.3	7.9
Long Term Debt	38.1	23.7	24.0	33.5	35.2	36.4	40.0	40.9	40.9	—

*Dividends paid on preferred stock: 1962—$3,500,000; 1963—$2,625,000.

**Adjusted to reflect two-for-one stock split in May 1964, 33⅓% stock dividend in June 1968 and two-for-one stock split in February 1969.

Directors

CHARLES F. BARBER
Chairman of the Board

R. L. HENNEBACH
President

F. W. ARCHIBALD
Vice President; Chairman of the Board, Southern Peru Copper Corporation

WILLIAM R. BOND
Executive Vice President, The Mead Corporation

FLETCHER L. BYROM
Chairman of the Board, Koppers Company, Inc.

GEORGE CHAMPION
President, Economic Development Council of New York City, Inc.

CRIS DOBBINS
Chairman of the Board, Ideal Basic Industries, Inc.

FORREST G. HAMRICK
Executive Vice President

JOHN M. KINGSLEY
Director, Bessemer Securities Corporation

R. E. McNEILL, JR.
Director, Manufacturers Hanover Trust Company

DALE E. SHARP
Director, J. P. Morgan & Co. Incorporated

SIMON D. STRAUSS
Executive Vice President

HOWARD S. TURNER
Chairman of the Board, Turner Construction Company

General Officers

CHARLES F. BARBER
Chairman of the Board and Chief Executive Officer

R. L. HENNEBACH
President

SIMON D. STRAUSS
Executive Vice President

FORREST G. HAMRICK
Executive Vice President

F. W. ARCHIBALD
Vice President

R. A. KENKEL
Vice President (Federated Metals Division)

K. D. LOUGHRIDGE
Vice President (Smelting and Refining)

FRANK L. MERWIN
Vice President (Traffic)

T. A. SNEDDEN
Vice President (Mining)

DOUGLAS SOUTAR
Vice President (Industrial Relations and Personnel)

H. Q. STRINGHAM
Comptroller

A. J. GILLESPIE, JR.
Secretary and General Counsel

R. J. PLUMB, JR.
Treasurer

H. E. KELSHAW, JR.
General Auditor

General Offices
120 Broadway
New York, N.Y. 10005

Corporate Office
15 Exchange Place
Jersey City, N.J. 07302

Registrar of Stock
The Chase Manhattan Bank, N.A.
1 Chase Manhattan Plaza
New York, N.Y. 10015

Transfer Office
120 Broadway
New York, N.Y. 10005


Granduc
Tacoma
Wallace
Galena
East Helena
Salt Lake City
San Francisco
Denver
Leadville
Omaha
Chicago
Warren
Whiting
Burlington
Toronto
Montreal
Black Lake
Mecco
Allendale
Elm
Edwards
Cleveland
Columbus Newark
West Haven
New York
South Plainfield
Somerville
Trenton
Perth Amboy
Baltimore
Manchester*
Hillsboro
Glover
Sand Springs
Amarillo
Silver Bell
Hayden
Tucson
Mission
San Xavier
New Market
Coy
Mascot
Young
Am. Limestone
Immel
Ground Hog
El Paso
Houston
Corpus Christi
Plomosas
Chihuahua
Fluorita
Santa Eulalia
Parral
Rosita
Santa Barbara
Monterrey
Charcas
San Luis Potosi
San Martin
Inguaran
Mexico, D.F.
Taxco
Hilton
Townsville
Mt. Isa
Bowen
Brisbane
Bonanza
Quiruvilca
Lima
Ilo
Cuajone*
Toquepala

AMERICAN SMELTING AND REFINING COMPANY

120 BROADWAY, NEW YORK, N.Y. 10005

- ● SMELTERS AND REFINERIES
- ■ OPERATING MINING PROPERTIES
- ◆ FEDERATED METALS DIVISION
- O METAL FINISHING PLANTS
- ◉ CENTRAL RESEARCH LABORATORIES
- ★ ADMINISTRATIVE OFFICES
- ❁ MAIN OFFICE

ASSOCIATED COMPANIES in italics

SMELTERS AND REFINERIES

Copper

Baltimore, Maryland (Refinery)
El Paso, Texas (Smelter)
Hayden, Arizona (Smelter)
Perth Amboy, New Jersey (Refinery)
Tacoma, Washington (Smelter, Refinery)

Zinc

Amarillo, Texas (Retort Plant)
Columbus, Ohio (Zinc Oxide)
Corpus Christi, Texas (Electrolytic Plant)
Hillsboro, Illinois (Zinc Oxide)

Lead

East Helena, Montana (Smelter)
El Paso, Texas (Smelter)
Glover, Missouri (Smelter, Refinery)
Omaha, Nebraska (Refinery)

Cadmium, High-Purity Metals

Denver, Colorado (Refinery)

OPERATING MINING PROPERTIES

Buchans (Zinc, Lead, Copper, Silver)
  Buchans, Newfoundland
Galena (Silver, Copper)
  Wallace, Idaho
Ground Hog (Zinc, Lead, Silver)
  Vanadium, New Mexico
Heavy Minerals* (Ilmenite)
  Manchester Township, New Jersey
Lake Asbestos of Quebec, Ltd. (Asbestos)
  Black Lake, Quebec
Leadville (Zinc, Lead, Silver) Leadville, Colorado
Midland Coal Company
  Allendale (Coal) Wyoming, Illinois
  Edwards (Coal) Edwards, Illinois
  Elm (Coal) Trivoli, Illinois
  Mecco (Coal) Victoria, Illinois
Mission (Copper, Silver, Molybdenum, Zinc)
  Sahuarita, Arizona
Northern Peru Mining Corporation
  Quiruvilca (Copper, Zinc, Lead, Silver)
    Quiruvilca, Peru
San Xavier (Copper) Sahuarita, Arizona
Silver Bell (Copper, Molybdenum, Silver)
  Silver Bell, Arizona
Tennessee Mines Division
  American Limestone (Sand, Gravel, Limestone)
    Knoxville, Tenn.
  Coy (Zinc) Jefferson County, Tenn.
  Immel (Zinc) Knox County, Tenn.
  Mascot (Zinc) Mascot, Tenn.
  New Market (Zinc) Jefferson County, Tenn.
  Young (Zinc) Jefferson County, Tenn.

FEDERATED METALS DIVISION

(See back cover for products)

Houston, Texas
Newark, New Jersey
Perth Amboy, New Jersey
San Francisco, California
Sand Springs, Oklahoma
Somerville, New Jersey
Trenton, New Jersey
Whiting, Indiana

Asarcon Federal Products Division

Somerville, New Jersey (Bronze bearings, bushings and parts)

Lone Star Lead Construction Corp.

Houston, Texas (Lead burning)

Federated Genco Limited

(Solder, type metal, babbitt, lead products, lead construction)

Burlington, Ontario
Montreal, Quebec
Toronto, Ontario

Enthone, Incorporated

Chicago, Illinois (Metal finishing chemicals)
Cleveland, Ohio (Plating chemicals)
Toronto, Ontario (Metal finishing chemicals)
West Haven, Connecticut
  (Metal finishing chemicals)

Ionic International Inc.

Warren, Michigan
  (Automatic plating equipment)

COMPANIES AND OPERATIONS APPROXIMATELY 50% OWNED

Asarco Intermetallics Corporation
(Bismuth telluride products, semiconductor compounds)
New York, N.Y.
Asarco Mexicana, S.A. (Zinc, Lead, Silver, Copper, Coal, Coke, Fluorspar)
Mexico, D.F. Mexico
Granduc, (Copper)
Stewart, British Columbia
M.I.M. Holdings Limited
Mount Isa, (Copper, Lead, Silver, Zinc)
Queensland, Australia
Hilton (Lead, Silver, Zinc)*
Queensland, Australia
Bowen Consolidated Coal Mines (Coal)
Bowen, Queensland, Australia
Britannia Lead Company Limited
Northfleet, Kent, England
Copper Refineries Pty, Ltd.
Townsville, Queensland, Australia
Neptune Gold Mining Company
(Zinc, Lead, Gold, Silver)
Bonanza, Nicaragua
Southern Peru Copper Corporation
(Copper, Molybdenum)
Toquepala, Peru

*Under Construction

Asarco Products Serving the Industrial Needs of the World

MINING, SMELTING AND REFINING

Antimonial Lead
Antimony
Antimony Oxide
Arsenic Trioxide
Bismuth
Cadmium
Cadmium Oxide
Cadmium Sulfide
Calcium Lead
Copper
Copper Selenium
Copper Tellurium
Ferro-Selenium
Ferro-Tellurium
Gold
High-purity Elements
Ilmenite
Indium
Indium Salts
Lead
Litharge
Molybdenum Concentrates
Nickel Selenium
Nickel Sulfate (crude)
Palladium (crude)
Platinum (crude)
Selenium
Silver
Slag
Sulfuric Acid
Sulfur Dioxide
Tellurium
Test Lead
Thallium
Thallium Salts
Zinc
Zinc Alloys
Zinc Oxide
Zinc Sulfate

AMERICAN LIMESTONE

Agricultural Limestone
Crushed Rock
Gravel
Ready-Mix Concrete
Sand

MIDLAND COAL COMPANY

Coal

LAKE ASBESTOS OF QUEBEC

Asbestos Fibre

FEDERATED METALS

Acoustilead (for sound control)
Aluminum Alloys
Anodes (for cathodic protection) Aluminum, Magnesium, Zinc
Anodes (for electroplating) Brass, Cadmium, Copper, Lead, Silver, Tin, Zinc
AsarcoLo Fusible Alloys
Babbitt Metals
Bearing Alloys
Bismuth Alloys
Brass Ingot
Brazing Alloys
Brighteners (for electroplating)
Bronze Continuous-Cast Shapes
Bronze Ingot
Cadmium Alloys
Caulking Lead
Copper Anodes (cast, electro-deposited, rolled)
Copper Shot
Counterelectrode Alloys
Deoxidizers (metallic)
Die Casting Alloys
Jewelry Metal
Lead Products (sheet, pipe, fittings, construction)
Magnesium Alloys
Magnesium Anodes
Metallurgical Specialties
Nickel Alloys
Nickel Salts (for electroplating)
Nuclear Shielding Lead
Phosphor Copper
Solder (extruded, drawn and cast)
Tin (pig, bar, ingot, wire, ribbon)
Type Metals
Zinc Anodes
Zinc Die Casting Alloys
Zinc Dust

ENTHONE

Automatic Plating Equipment
Blackening Compounds
Buffing Compounds
Corrosion Inhibitors
Derusting Salts
Electroless Plating Processes
Metal Strippers
Plating Brighteners
Specialty Chemicals (for metal finishing)
Surface Conditioning Compounds

IONIC INTERNATIONAL

Automatic Plating Equipment

ASARCO

AMERICAN SMELTING AND REFINING COMPANY